EX PARTE OR LATE FILED

TELECOMMUNICATIONS TIA INDUSTRY ASSOCIATION

March 13, 1995

DOCKET FILE COPY ORIGINAL

RECEIVED
MAR 13 1995
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

William F. Caton, Acting Secretary
Federal Communications Commission
1919 M. Street, N. W. Room 222
Washington, D. C. 20554

Re: ET Docket No. 93-235
Erratum to TIA ex parte letter concerning
Additional Frequencies for Cordless Telephones

Dear Mr. Caton:

On March 10, 1995, the Telecommunications Industry Association ("TIA") filed an ex parte letter in the above-captioned proceeding. My title and signature were inadvertently omitted. Transmitted herewith is the corrected and signed letter as well as the meeting notes that were included with the original (unsigned) letter.

Please associate this material with the record of the above-referenced proceeding. If there are any questions regarding this matter, do not hesitate to contact the undersigned.

Respectfully submitted,

Daniel L. Bart
Vice President, Standards and Technology

Telecommunications Industry Association
2500 Wilson Boulevard
Suite 300
Arlington, VA 22201

(703) 907-7703 (Phone), (703) 907-7727 (Fax)

cc: Richard B. Engelman
Regina M. Keeney
Julius P. Knapp
Michael J. Marcus
Richard M. Smith
F. Ronald Netro
James H. Baker, FIT
Thomas E. Goode, Esq., UTC
Joseph M. Sandri, Esq., Keller and Heckman

No. of Copies rec'd 0+5
List A B C D E

TELECOMMUNICATIONS INDUSTRY ASSOCIATION

March 10, 1995

William F. Caton, Acting Secretary
Federal Communications Commission
1919 M. Street, N. W. Room 222
Washington, D. C. 20554

Re: ET Docket No. 93-235, ex parte
Additional Frequencies for Cordless Telephones

Dear Mr. Caton:

This is to report on a meeting that was held on March 7 between the Telecommunications Industry Association ("TIA") Mobile & Personal Communications Division Consumer Radio Section ("the Section") and representatives of Private Land Mobile Radio Services (PLMRS) user groups. The meeting was arranged by the Section at the suggestion of the Commission's Office of Engineering and Technology ("OET") to discuss the PLMRS community's concerns about possible interference from cordless telephones to PLMRS operations.

Please associate this material with the record of the above-referenced proceeding. If there are any questions regarding this matter, please contact the undersigned.

Respectfully submitted,

Daniel L. Bart
Vice President, Standards and Technology

Telecommunications Industry Association
2500 Wilson Boulevard
Suite 300
Arlington, VA 22201

(703) 907-7703 (Phone), (703) 907-7727 (Fax)

cc: Richard B. Engelman
Regina M. Keeney
Julius P. Knapp
Michael J. Marcus
Richard M. Smith
James H. Baker, FIT
Thomas E. Goode, Esq., UTC
Joseph M. Sandri, Esq., Keller and Heckman
F. Ronald Netro

MEETING NOTES

J. E. Padgett
Chairman, TIA Mobile & Personal Communications Division
Consumer Radio Section
March 10, 1995

On March 7, 1995, the Telecommunications Industry Association ("TIA") Mobile & Personal Communications Division Consumer Radio Section ("the Section") met with representatives of Private Land Mobile Radio Services ("PLMRS") user groups. The meeting was held to discuss concerns of possible interference to PLMRS operations from cordless telephones operating on selected PLMRS frequencies near 44 and 49 MHz. Such operation was proposed by the Commission in a Notice of Proposed Rule Making ("NPRM") in ET Docket No. 93-235, adopted in August 1993. The March 7 meeting was initiated by the Section with invitations to representatives of the American Petroleum Institute ("API"), Forest Industries Telecommunications ("FIT"), and the Utilities Telecommunications Council ("UTC"), all of whom had opposed the use of the frequencies by cordless telephones in their Comments on the NPRM. The meeting was attended by Mr. Thomas E. Goode, Staff Attorney for UTC, Mr. Joseph M. Sandri, Jr. of the firm Keller and Heckman, representing API, and the Section representatives listed in the Attachment. Mr. James H. Baker of FIT was invited but did not attend. Mr. Sandri related that he had discussed the matter with Mr. Baker, and that Mr. Sandri and Mr. Goode could accurately represent FIT's views.

In their Comments, API, FIT, and UTC all had expressed concerns about interference from cordless telephones to PLMRS systems, and in the reverse direction (PLMRS to cordless) as well. In its Reply Comments, the Section had provided technical analysis intended to address those concerns. From that analysis, it was concluded that due to their low transmit power, cordless telephones would not cause harmful interference to PLMRS operations, and further, that cordless telephones would not sustain harmful interference from PLMRS transmitters by virtue of frequency agility and a channel "pre-scanning" mechanism (which would be a requirement in the FCC Rules). The Comments and Reply Comments were filed on December 8 and December 23, respectively, in 1993.

After introductions, Mr. Padgett explained that the purpose of the meeting was to obtain feedback from the PLMRS community on any remaining concerns they might have about possible interference from cordless telephones to PLMRS operations, since there had been no response in the record of the proceeding to the Section's Reply Comments.

Mr. Goode responded that *the primary concern of the PLMRS users is actually the potential for interference from PLMRS transmissions to cordless telephones, rather than inter-*

ference from cordless to PLMRS. Mr. Sandri agreed with this assessment. Messrs. Goode and Sandri explained that interference from PLMRS users to cordless communications could result in consumer complaints to the PLMRS operators (e.g., utilities), public relations problems, and adverse media exposure. Their concern is that such occurrences conceivably could result in eventual Commission action to remove PLMRS systems from the affected frequencies.

Section members pointed out that not only would the FCC Rules require that cordless telephones using the proposed PLMRS frequencies be required to avoid establishing a communication link on an occupied channel, but that it is in the business interest of each manufacturer to design its products to be as robust as possible, since the typical consumer reaction to interference problems is to return the product to the retailer. It was added that the return rate for cordless telephones is disproportionately high relative to other consumer electronics products due to interference problems caused by the current lack of an adequate number of channels. It was also observed that cordless telephones would be clearly designated as a secondary user to PLMRS, and would have no recourse but to accept any interference that PLMRS operations might cause. Specific warning labels and cautionary statements in the owner's manual were discussed as potential measures to minimize customer confusion about usage rights on the frequencies.

As an example illustrating the potential interference problems that could result from sharing between PLMRS and cordless, Mr. Sandri cited the 1994 gas line explosion in New Jersey. He observed that in such a case, there will be a high concentration of personnel in the affected area to deal with the emergency, and that in such circumstances, reliable radio communications are critical. He related that in that particular case, workers were equipped with both cellular telephones and PLMRS transceivers, but due to the high calling demand, the cellular telephones experienced a high degree of blocking and could not be relied upon for emergency communication. The PLMRS units therefore were essential to support the operations required to deal with the emergency. He suggested that if the PLMRS frequencies also had been available to cordless telephones, the resulting interference from PLMRS to cordless as well as in the reverse direction could have frustrated the emergency containment and repair operations as well as the desire of nearby cordless telephone users to communicate with others.

Section members pointed out that in such a case, the PLMRS units would capture the channels due to their much greater transmit power (on the order of 60 dB greater than a cordless telephone). Although this often would prevent the cordless telephones from using the affected frequencies, the cordless telephone would have access to the PLMRS frequencies unassigned in that particular area, as well as the existing 10 channels, and would therefore be less likely to be blocked than they are at present, with only 10 available channels (five of which are subject to interference from "baby monitors" and other non-cordless Part 15 uses). Section members noted that it was their understanding that while all of the proposed cordless channels are used somewhere in the U. S., relatively few (e.g., a half-dozen or so) are used in any given area. Mr. Sandri affirmed that this was correct.

Messrs. Sandri and Goode noted that there still is the concern about cordless users experiencing interference from PLMRS, and developing the perception that PLMRS operators

are somehow encroaching upon channels that belong to cordless telephones. They noted that even though a cordless telephone may able to avoid establishing a link on a frequency that is already occupied, the possibility remains that a PLMRS transmission during an already-established cordless call could disrupt the cordless call. They observed that in this case, the cordless user might hear enough of the PLMRS communication to identify the operator, resulting in the possibility of a complaint from the consumer. Mr. Goode added that this scenario also raises a related issue of the privacy of the PLMRS communication.

Section members addressed these two issues as follows. Regarding mid-call disruption of cordless communication, they explained that the reaction of the customer would typically be to push the "channel change" button. They indicated that it was their understanding that PLMRS transmissions are currently "push-to-talk," and the channel is vacated when the speaker releases the transmit button on the PLMRS transceiver. Mr. Sandri agreed with this. Section members pointed out that even if the PLMRS interference was strong enough to block the cordless handset-to-base signaling required to execute the channel change, the user could change channels as soon as the PLMRS user released the channel. Messrs. Goode and Sandri suggested an enhanced capability which would allow the cordless telephone to sense interference during a call and automatically change channels "on-the-fly."[1]

Regarding the privacy issue, Section members noted that the cordless user could not effectively maintain communication with the far-end party while simultaneously eavesdropping on a PLMRS conversation due to the FM capture of the receiver (either the cordless transmission or the PLMRS transmission would "capture" the cordless receiver). In order to continue the telephone conversation, the cordless user would be forced to change channels. Moreover, the cordless telephone could not systematically be used to deliberately monitor or "scan" PLMRS communications, because the audio circuits in the cordless telephone are muted until the handset/base signaling handshake is complete and a link is established.

Mr. Padgett requested that the discussion focus on interference from cordless to PLMRS. He suggested that because of the low power radiated by cordless telephones (on the order of 20 microwatts), the capture of a PLMRS receiver by a cordless telephone would be a "pathological case," requiring, for example, that a PLMRS mobile be on the extreme edge of coverage with respect to its base transmitter, and simultaneously very near a cordless phone. Mr. Sandri explained that the reliability specification for his clients' communications systems is 99.9999% (the chance of an outage is one in a million), so that even a small likelihood of interference would compromise the reliability objectives. Mr. Padgett explained that such a high reliability objective implies very large received signal power margins, to account for the variability in path loss (e.g., shadow fading) as well as the variations in ambient man-made noise at frequencies in the range of interest. To cause an outage, the cordless telephone signal would have to be strong enough to overcome the ambient noise allowance as well as the large fade margins in the link budget.

---

[1]Implementation of such a capability is non-trivial, and the technical and economic viability are unclear.

Mr. Sandri suggested that the Section provide them with a technical paper examining the cordless-to-PLMRS interference issue, which could be used as a basis for discussion with PLMRS engineers.

The discussion returned to the issue of PLMRS-to-cordless interference. Messrs. Sandri and Goode suggested that industry standards be developed for protecting cordless telephones from PLMRS interference. Mr. Haynes, who is chair of the TIA TR-32 Engineering Committee associated with the Section, explained that it is the intent of TR-32 to convene a standards activity for cordless telephones after the proceeding is concluded and the FCC's proposal frequencies for cordless telephones into the Rules. Mr. Haynes stated that PLMRS engineers would be welcome to participate in that activity. Mr. Sandri responded that he would prefer to see the development of standards prior to rule making, and would like to see the standards actually incorporated directly into the FCC Rules.

Messrs. Goode and Sandri stated that the dialogue at this meeting was beneficial and should continue. They also requested suggestions from the Section regarding an approach to dealing with the potential "political" problem of cordless telephone user complaints about interference from PLMRS. In sum, Messrs. Goode and Sandri had four main requests of the Section:

1. That the dialogue between the Section and the PLMRS user groups continue.
2. That the Section provide them with a technical paper focusing on the details of potential cordless-to-PLMRS interference.
3. That the Section provide some suggestions on how to deal with the political aspects of any PLMRS-to-cordless interference that may occur.
4. That the Section consider developing a technical standard for protecting cordless telephones from PLMRS interference.

The Section agreed to provide the technical paper and to consider points (3) and (4). Mr. Padgett requested that the Section be provided with API and UTC engineering contacts, suggesting that it might be productive to discuss the technical questions fairly quickly with discussions among Section members and PLMRS engineers, perhaps during a teleconference or the Section's next meeting. Mr Goode committed to circulate the technical paper among his engineering contacts, but no definite plans were made for contact between Section members and PLMRS eingineers.

After Messrs. Goode and Sandri left the meeting, the Section discussed the main points that had been raised. It was agreed that the requested technical paper should be developed and provided to Messrs. Goode and Sandri as soon as possible.

The Section also discussed approaches for reducing the exposure of PLMRS operators to interference complaints from cordless users. One possibility mentioned was for cordless telephones to maintain a long-term list of frequencies that are often subjected to high interference levels. Those frequencies would then be avoided. However, it was pointed out that this would not be very effective in an emergency situation such as described by Mr. Sandri, because the emergency could cause usage on frequencies not reflected by the cordless phone's historical record, which typically would be developed under "normal" (non-emergency) conditions. Further discussion centered around the possibility of re-

questing that the Rule changes require that cordless telephones operating on any of the new channels also be able to operate on some or all of the existing ten channels. This would provide non-PLMRS channels, should the new channels be occupied during such emergencies.

The development of standards was also discussed. The Section still believes that standards work is best initiated after the Rule Making is complete, due to the time required for the standards work and the uncertainties associated with an unresolved proceeding.

Finally, various approaches were discussed for warning labels and cautionary statements in the owner's manual as means educating customers to the possibility of interference during a call. It was generally felt that such measures were useful, but that specific references to the types of PLMRS users (e.g., "the gas company") should be avoided, because they could actually encourage the customer to make a complaint.

JEP/3-10-95

ATTACHMENT

TELECOMMUNICATIONS INDUSTRY ASSOCIATION
MOBILE & PERSONAL COMMUNICATIONS
CONSUMER RADIO SECTION REPRESENTATIVES
ATTENDING THE MARCH 7, 1995 MEETING

Dan Bart	TIA
John Boos	Motorola
Bill Cole	W. J. Cole & Assoc.
Jim Haynes	Uniden
Vincent Knigge	Cobra
Dennis R. McCarthy	Thomson Consumer Electronics
Maynard McGhay	Maxon
Lou Mecseri	Sony
Richard Mullen	Panasonic
Jay Padgett	AT&T
Eric Schimmel	TIA